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In re Application of

Application Number

07/324,481

Filed

Mar. 16, 1989

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☐ (A) referred to in:United States Patent Application Publication No. 5,284,931, page \_\_\_\_\_, line \_\_\_\_\_,

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# United States Patent [19]

Springer et al.

US005284931A  
 [11] Patent Number: 5,284,931  
 [45] Date of Patent: Feb. 8, 1994

## [54] INTERCELLULAR ADHESION MOLECULES, AND THEIR BINDING LIGANDS

[75] Inventors: Timothy A. Springer, Newton, Mass.; Robert Rothlein; Steven D. Marlin, both of Danbury, Conn.; Michael L. Dustin, University City, Mo.

[73] Assignee: Dana Farber Cancer Institute, Boston, Mass.

[21] Appl. No.: 515,478

[22] Filed: Apr. 27, 1990

### Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 456,647, Dec. 22, 1989, which is a continuation-in-part of Ser. No. 45,963, May 4, 1987, which is a continuation-in-part of Ser. No. 115,798, Nov. 2, 1987, which is a continuation-in-part of Ser. No. 153,943, Feb. 16, 1988, which is a continuation-in-part of Ser. No. 189,815, May 3, 1988, which is a continuation-in-part of Ser. No. 250,446, Sep. 28, 1988, which is a continuation-in-part of Ser. No. 324,481, Mar. 16, 1989, which is a continuation-in-part of Ser. No. 373,882, Jun. 30, 1989, which is a continuation-in-part of Ser. No. 456,647, Dec. 22, 1989.

[51] Int. Cl.<sup>3</sup> ..... A61K 39/395  
 [52] U.S. Cl. .... 424/85.8; 530/388.22;  
 530/395; 530/808; 530/868; 514/8  
 [58] Field of Search ..... 424/85.8, 85.91;  
 530/387, 389, 808, 388.22

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(List continued on next page.)

Primary Examiner—Christine M. Nucker  
 Assistant Examiner—Thomas Cunningham  
 Attorney, Agent, or Firm—Sterne, Kessler, Goldstein & Fox

### ABSTRACT

[57] Pharmaceutical compositions comprising antibodies to intercellular adhesion molecule-1 (ICAM-1 or CD54) are useful in methods of decreasing the severity of inflammation associated with the adhesion of leukocytes to cells bearing ICAM-1. Treatment with anti-ICAM-1 antibodies reduced the severity of inflammation associated with acute organ or tissue rejection and prolonged allograft survival time. Such compositions may optionally contain other immunosuppressive agents.

11 Claims, 25 Drawing Sheets

To: Henry  
 #905271